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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/596,638	04/02/2007	Svante Signell	P20144-US1	8693
27045	7590	05/26/2010	EXAMINER	
ERICSSON INC. 6300 LEGACY DRIVE M/S EVR 1-C-11 PLANO, TX 75024			HO, TAN	
			ART UNIT	PAPER NUMBER
			2821	
			NOTIFICATION DATE	DELIVERY MODE
			05/26/2010	ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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<b>Office Action Summary</b>	<b>Application No.</b> 10/596,638	<b>Applicant(s)</b> SIGNELL ET AL.	
	<b>Examiner</b> Tan Ho	<b>Art Unit</b> 2821	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 02 April 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-79 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4, 11-16, 27, 32, 34-37, 49-54, 65, 68, 69, 73, 75, 77 and 78 is/are rejected.
- 7) ☒ Claim(s) 5-10, 17-26, 28-31, 33, 38-48, 55-64, 66, 67, 70-72, 74, 76 and 79 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 June 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |                                                                                        |                                                                   |
|----------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>06/2006</u> .                                                 | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Claim Objections***

1. Claim 1 is objected to because of the following informalities: In claim 1, line 6, the recitation "the antenna elements is set" should be change to -- antenna elements are set--. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-3, and 34-36 are rejected under 35 U.S.C. 102(b) as being anticipated by Kyritsi, the paper title "MIMO capacity in free space and above perfect ground:

Theory and experimental results", cited by applicant.

Kyritsi discloses, in figure 1, a transceiver system comprising a plurality of antenna elements for line in sight communication, the antenna elements are set in relation to communications distance, and wherein the antenna configuration maximizes multiple-input multiple-output.

4. Claims 1-3 and 34-36 are rejected under 35 U.S.C. 102(e) as being anticipated by Agee et al (US Patent 7,248,841).

Agee et al disclose, in figure 12, a transceiver system comprising a plurality of antenna elements for line in sight communication, the antenna elements are set in relation to communications distance, and wherein the antenna configuration maximizes multiple-input multiple-output.

5. Claims 1-3 and 34-36 are rejected under 35 U.S.C. 102(e) as being anticipated by Jia et al (US Patent 7,356,089).

Jia et al disclose, in figure 12 a transceiver system comprising a plurality of antenna elements (104,108) for line in sight communication, the antenna elements are set in relation to communications distance, and wherein the antenna configuration maximizes multiple-input multiple-output, see column 6, lines 16-31.

6. Claims 11, 12, 27, 32, 49, 50, 54, 65, 68, 69, 73, 75, 77, 78 are rejected under 35 U.S.C. 102(b) as being anticipated by Wong et al (US Patent 6,323,823).

Wong et al disclose, in figure 1, a clustered antenna array comprising a plurality of clusters of antenna elements (152, 154,156), wherein the plurality of antenna elements are separated by a distance set in relation to communication distance. Figure 2a show the antenna elements arranged symmetrical in a circular pattern.

### ***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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8. Claims 4 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jia et al.

The patent to Jia et al, described above, differs from the claimed invention because it does not disclose the specific separation of the antenna elements. However the separation of the antenna elements is considered an obvious matter of design choice depending upon the desired characteristics of the antenna device.

9. Claims 13-16, and 51-53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wong et al.

The patent to Jia et al, described above, differs from the claimed invention because it does not disclose the specific separation of the clusters of antenna elements. However the separation of the clusters of antenna elements is considered an obvious matter of design choice depending upon the desired characteristics of the antenna device.

***Allowable Subject Matter***

10. Claims 5-10, 17-26, 28-31, 33, 38-48, 55-64, 66, 67, 70-72, 74, 76, and 79 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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11. The patent to Golstein et al is cited as of interest showing the antenna device similar to that disclosed.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tan Ho whose telephone number is (571) 272-1822.

The examiner can normally be reached on M-F (8:00AM - 5:00PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Douglas Owens can be reached on (571) 272-1662. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Tan Ho/  
Primary Examiner, Art Unit 2821

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